



November 23rd, 2012

Ms. Erica Hamilton,
Commission Secretary,
British Columbia Utilities Commission.

FortisBC Inc. Advanced Metering Infrastructure CPCN - Procedural Conference in Kelowna,
November 8, 2012 (PC) [BLC-ACTIVE.FID1476786]

Dear Ms. Hamilton;

My statement is as follows:

In C13-4, Mr. Shadrack, (Director, Area D of the Regional District Central Kootenay) makes two recommendations with which I concur. They are:

1. That "These proceedings should be suspended until such time as Fortis BC has provided the Commission with the ability to consider a comprehensive wired smart meter option if the meter program is even deemed applicable."

and

2. That "All of the proceedings in this hearing should contain an oral component so as to maximize the ability of lay persons to make their views, concerns, questions and opinions known to the Commission panel."

I concur with these recommendations for the following reasons:

Re: #1

The wireless smart meter option is an illegal application of the frequencies and not meeting Fortis's Objectives in their application's Executive Summary.

- not managing electrical usage and associated cost
- not meeting the BC Energy Plan
- not managing natural resources
- not in the best interest of the public
- not reducing GHG emissions related to building energy use
- not compliant with Safety Code 6
- not in the best interest of the applicant

Re: #2

The Procedural Conference in Kelowna further verified the need for a suspension in the proceedings. Critical science has been missing from Fortis's application, how can a procedural agenda, costs, time-table, number of expert witnesses, further procedural conference, etc be determined without the missing technical science presented.

The Procedural Conference in Kelowna was an administrative and legal meeting without the critical missing science represented.

My attempts at bringing the dismissed missing science into the Procedural Conference discussion were cut short seconds into my presentation by Mr. Fulton and the committee. It was deemed I was providing evidence instead of substantiated peer reviewed science called electricity and recognized medical education for education credits required for medical licensing. The frequencies in the wireless application are illegal as applied and the peer reviewed science supporting that is electricity.

While the chair expressed their patience for what appeared to be my lack of understanding of the proceedings, as construction estimators we don't leave risks, liability, technicalities and substantial costs out of a discussion before proceeding.

The proceeding need to be suspended until the technical aspects of the application are addressed. Buildings are grossly exceeding BC Building Code and Fortis as the energy provider is wasting 100s of megawatts of energy production responding to symptoms of solar radiation. Furthering the energy waste is that buildings are still super heating the atmosphere and contributing to climate change, weather severity, droughts, fire severity.

Sincerely,

Curtis Bennett
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THERMOGRAFIX consulting corporation

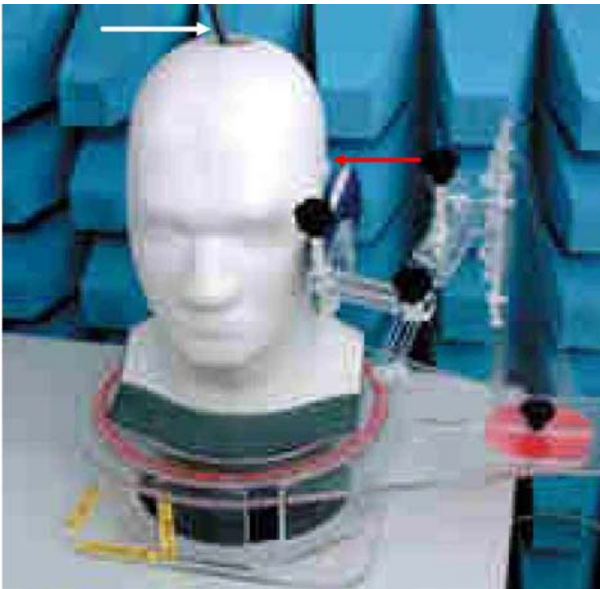
FortisBC Inc. Advanced Metering Infrastructure CPCN - Procedural
Conference in Kelowna, November 8, 2012 (PC) [BLC-
ACTIVE.FID1476786]

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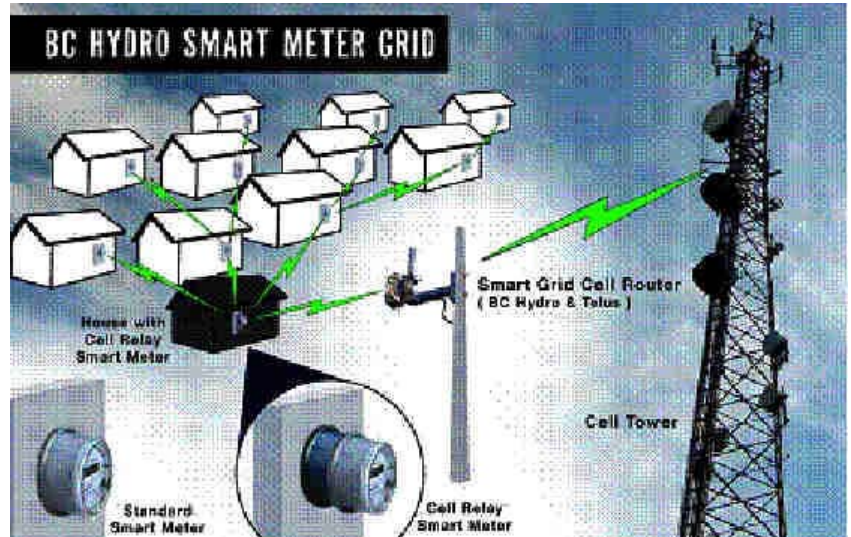
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Note: All Buildings in Fortis's Coverage Areas

Specific Absorption Rate Used For Human Exposure to RF EMFs



Specific Absorption Rate



BC Hydro Wireless Smart Meter Grid

Safety Standards related to human exposure to radio frequency EMFs are based on decades of scientific literature but admit science is missing linking the frequencies to adverse health effects. Safety Code 6 states "**lack of evidence of causality, biological plausibility and reproducibility greatly weaken the hypothesis for such effects**". Safety Code 6 also says "**unintentional stimulation of tissue is to be avoided as is the heat effect.**" Intentional stimulation of tissue is medical imaging in controlled environments with the subject in intended position of use and wearing protective clothing.

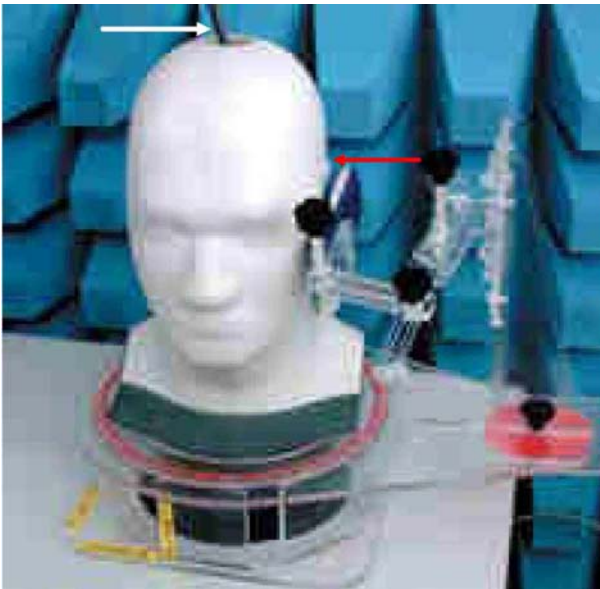
Safety Code 6 uses the same science standards as the FCC and other international science bodies. They have adopted the Specific Absorption Rate (SAR) and a picture of the test model is at the top left of the page. This is the test used for cellphone, Wi-Fi and Smart Meter Safety. Health Canada deemed Wi-Fi and Smart Meter frequency exposure acceptable 24/7. The wireless computers and smart meters weren't held against the head. BC Hydro states distance from the meter makes you safe and that the meter base reflects the meter frequencies away from the building.

The science linking the frequencies to adverse health effects was reported to Health Canada and by expert witness at the request of Canadian Parliament's Standing Committee on Health. The Specific Absorption Rate assumed people were hit by the frequencies in a localized area. The SAR test left out the cell towers communicating with the cell phone. The frequencies, electrical information and vulnerability of biological systems wasn't included in the SAR test.

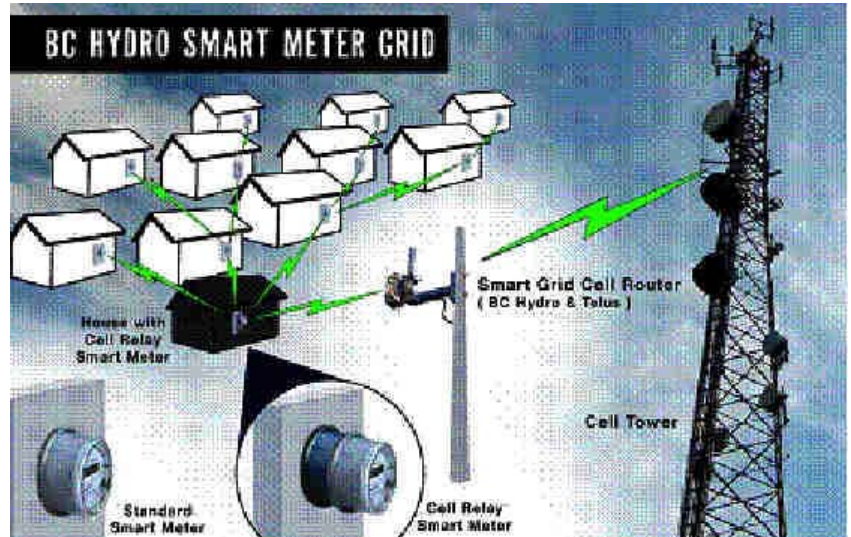
The diagram top right is BC Hydro's wireless smart grid and demonstrates distance from the meter is irrelevant for biology in the coverage areas. Anything in the coverage area is being stimulated and that is to be avoided. Incorporating the wireless infrastructure, missing frequencies of biology shows causality, biological plausibility and reproducibility missing in Safety Code 6.

The admission there is a low power density means you are in the circuit, you can't leave millions of frequencies out of a frequency equation. Electrical Engineers and other science professionals weren't informed critical electrical information was left out of an electrical equation.

Specific Absorption Rate Used For Human Exposure to RF EMFs



Specific Absorption Rate



BC Hydro Wireless Smart Meter Grid

BC Hydro's diagram of the wireless smart grid demonstrates everything in the coverage area is radiated by the frequencies.

The frequency interactions with everything biological in the coverage areas has to be considered and evaluated by the qualified science professionals including the electrical profession qualifying interaction.

The wireless frequencies go through buildings interacting with structural components, fire separations, occupants, pacemakers, health monitoring equipment, etc. There is a physical interaction with the frequencies at molecular levels affecting building code compliance by vibrating the building billions of times per second.

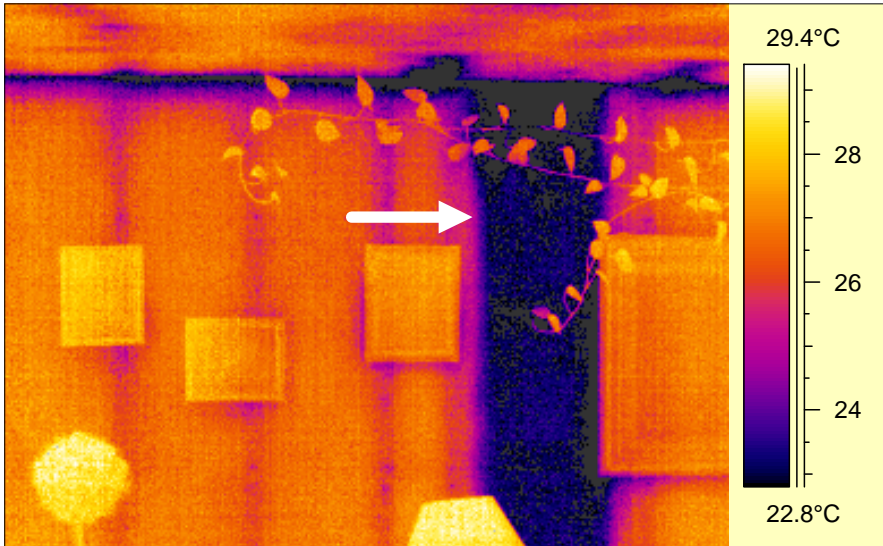
Accelerated corrosion of infrastructure costs within the wireless coverage areas have to be considered.

With the missing science reported linking the frequencies to adverse health effects, the dangers of the wireless frequencies are now lectured in medical education for continuing education credits required for medical licensing.

The Provincial Government, BC Hydro, Fortis, BCUC and all across the board have to comply with Safety Code 6 by not stimulating or heating tissue. The Canadian Wireless Telecommunications Association's compliance with Safety Code 6 is mandatory and a condition of license for new towers as well as existing towers.

The tower frequencies as applied won't comply with Safety Code 6 and negates sharing infrastructure costs with BC Hydro in a wireless application.

MISSING INSULATION BEHIND DRYWALL



IR information	Value
Date of creation	1/17/2000
Time of creation	8:58:05 PM
Object parameter	Value
Emissivity	0.90



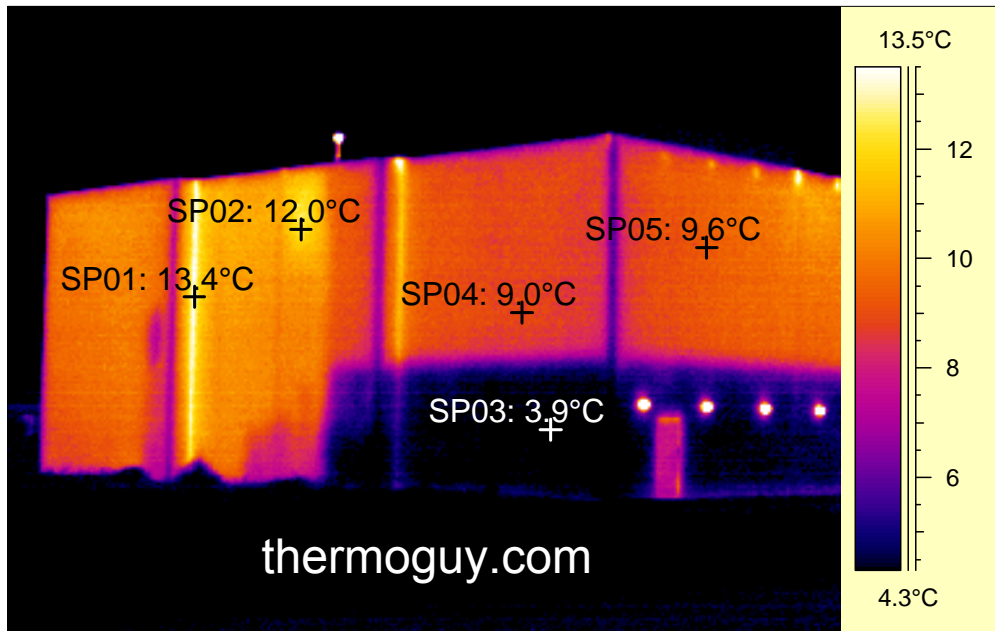
Energy demand increases and electrical grids are strained so smart meters are being employed to monitor energy use. Energy companies can read the meters from remote locations and save energy to meet energy objectives.

The exterior wall image above shows missing insulation values in one stud space. The problem should have been addressed while under warranty but was missed in the inspection.

A blower door test testing for pressure differential wouldn't have caught the problem either.

This is energy loss, fossil fuel and electricity waste producing more GHG emissions. There is a potential for mold and premature failure of building components. That affects the home owner's heat and investment.

Smart meters won't catch or address the energy waste here, they will bill you peak hours for the usage.



IR information	Value
Date of creation	11/25/2004
Time of creation	9:57:02 AM
Object parameter	Value
Atmospheric temperature	4.0°C

New Building Illegal But Passed All Inspection

4 Deg. C Day, Dark Area is Insulated Showroom.

Tilt up Construction, No Insulation, Heaters on Roof and Heat Rises.

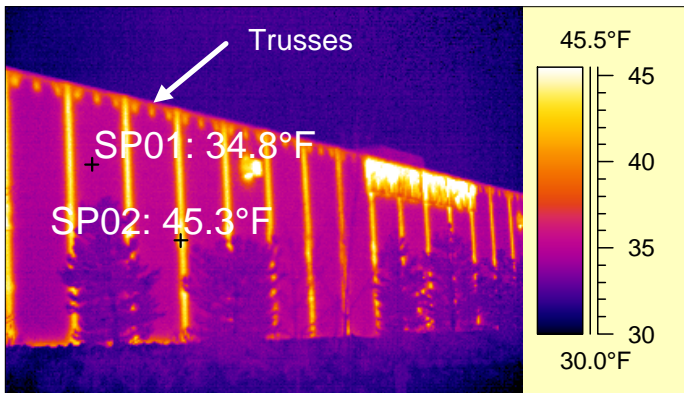
Mass of Uninsulated Concrete Structure Heated.

Building Services Working Overtime, Energy Waste, More Emissions.

Beware of Solar Radiation EMFs & A/C Use Responding to Symptoms.

A/C is Refrigeration Wasting 1000s of Watts Per Hour Per Building.

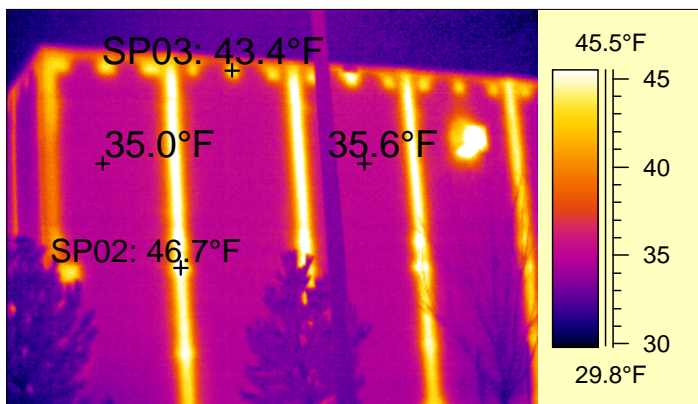
Blower Door Test Not Addressing the Energy Loss or Saving Energy



Object parameter	Value
Emissivity	0.90
Atmospheric temperature	20.8°F

IR information	Value
Date of creation	1/12/2003
Time of creation	11:22:53 PM

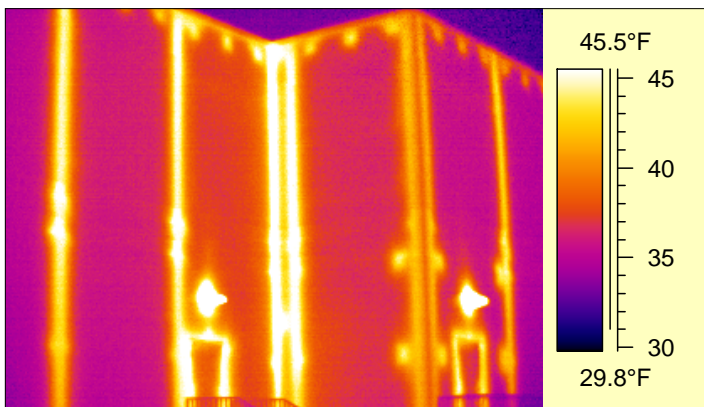
Home Depot



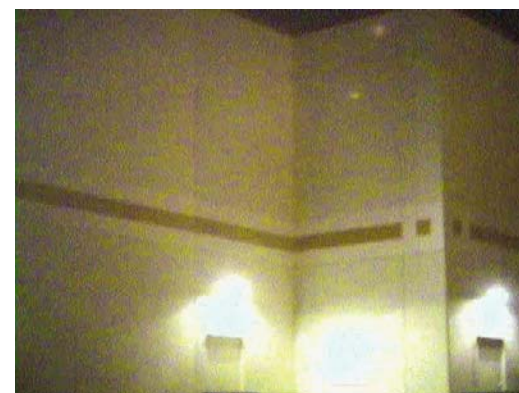
Object parameter	Value
Emissivity	0.90
Atmospheric temperature	20.8°F

IR information	Value
Date of creation	1/12/2003
Time of creation	11:23:14 PM

Home Depot



Object parameter	Value
Emissivity	0.90
Atmospheric temperature	20.8°F



IR information	Value
Date of creation	1/12/2003
Time of creation	11:24:50 PM

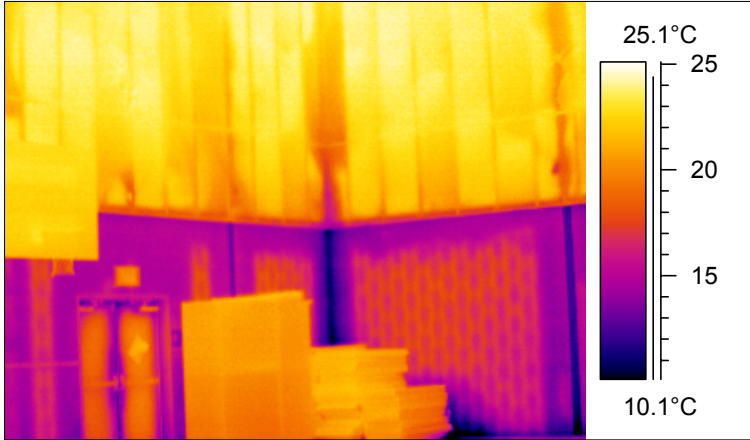
Home Depot

THERMOGRAFIX

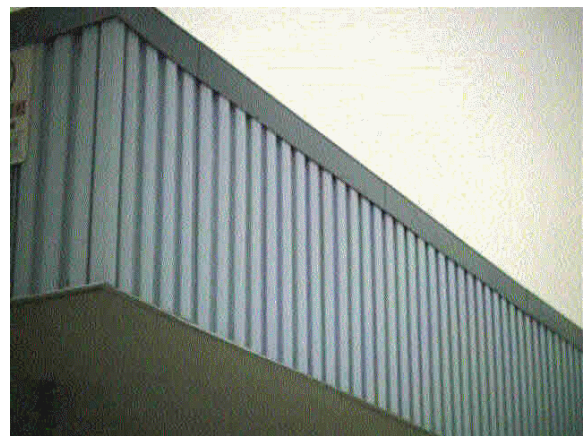
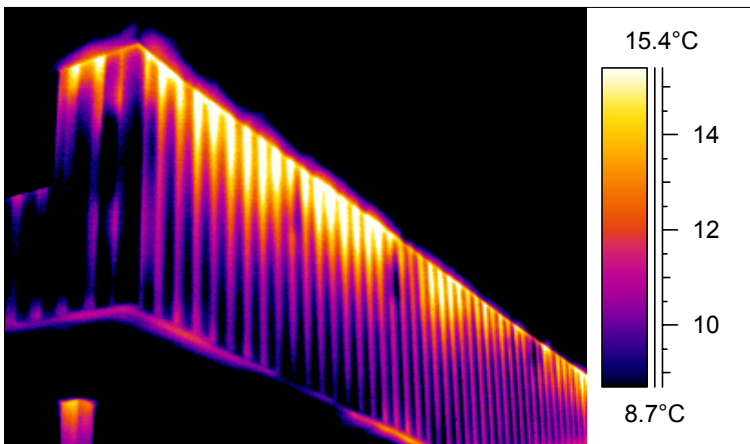
consulting corporation

Box 2361 Stn R.
Kelowna, B.C.
V1X 6A5

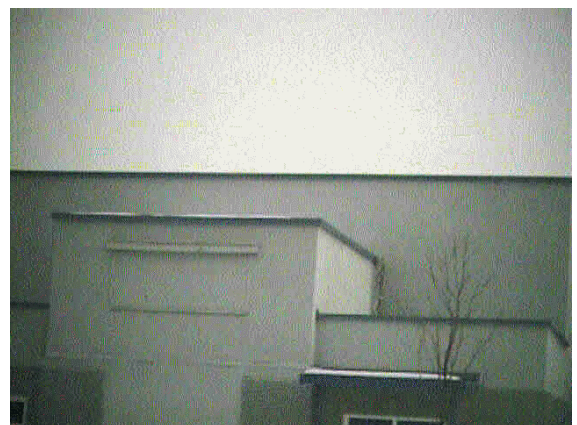
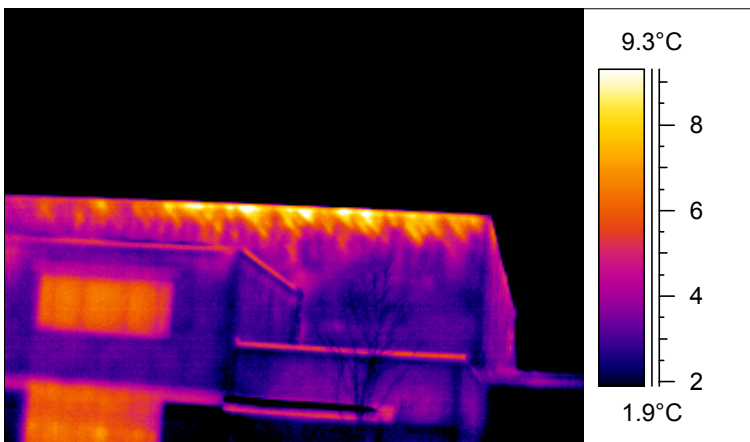
THREE DIFFERENT SCHOOLS



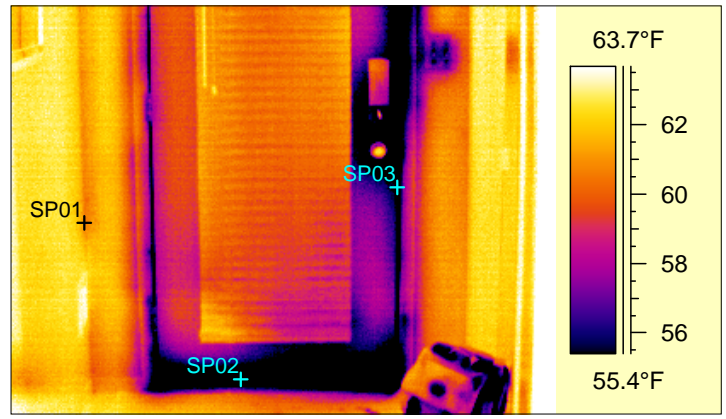
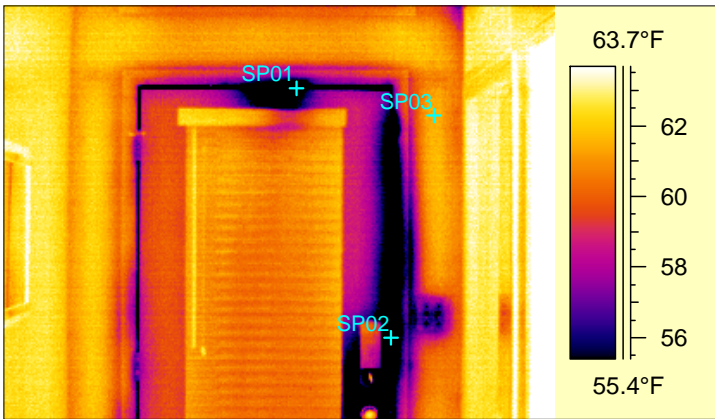
Heat loss in January and thermal performance of components



Exfiltration in January in a public school



Exfiltration and thermal bridging of the building envelope



Top of Door

Bottom of Door

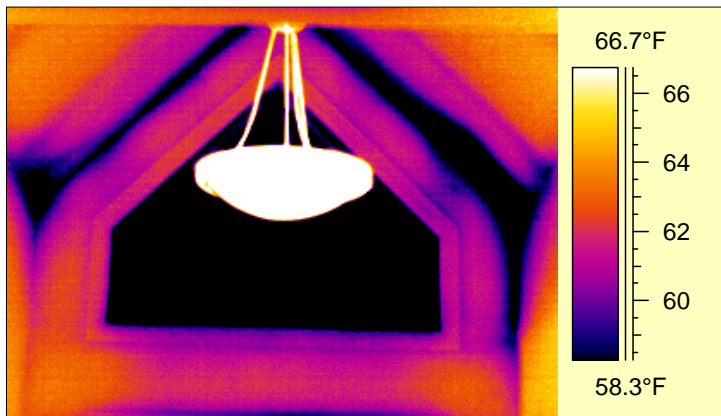
IR information	Value
Date of creation	12/22/2011
Time of creation	7:16:23 AM
Object parameter	Value
Atmospheric temperature	63.0°F
Relative humidity	0.41
Label	Value
IR : min	34.0°F
SP01	35.3°F
SP02	34.2°F
SP03	61.7°F

IR information	Value
Date of creation	12/22/2011
Time of creation	7:16:28 AM
File name	B1222-08.img
Label	Value
IR : min	33.5°F
SP01	60.6°F
SP02	51.7°F
SP03	43.8°F

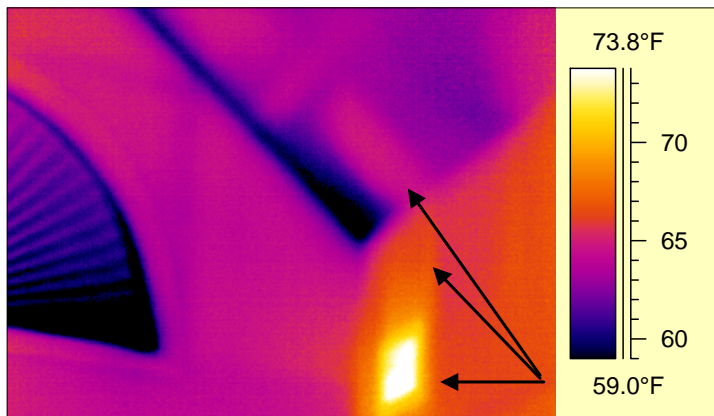
These 2 images show heat loss around the doors associated with air leakage. BC Building Code **5.4.1. Air Barrier Leakage**

Building services are compromised and work overtime to accommodate losses BC Building Code **5.4.1.1.(e)**

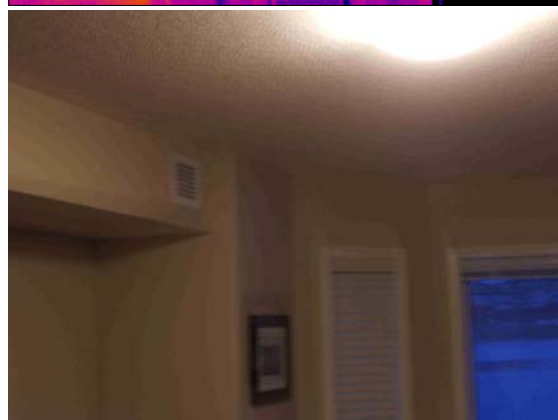
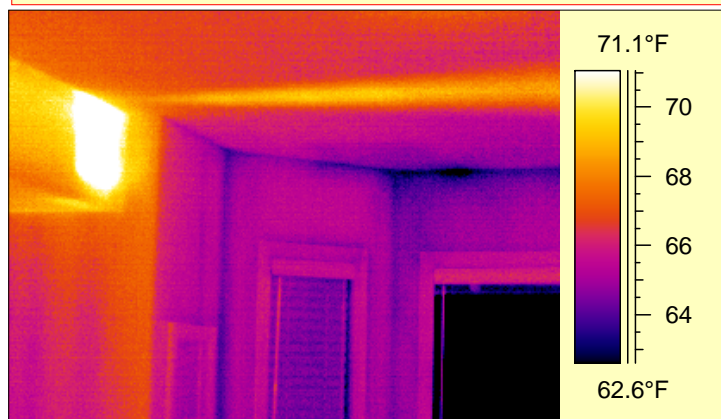
Condensation is a concern. BC Building Code **5.4.1.1.(c)**



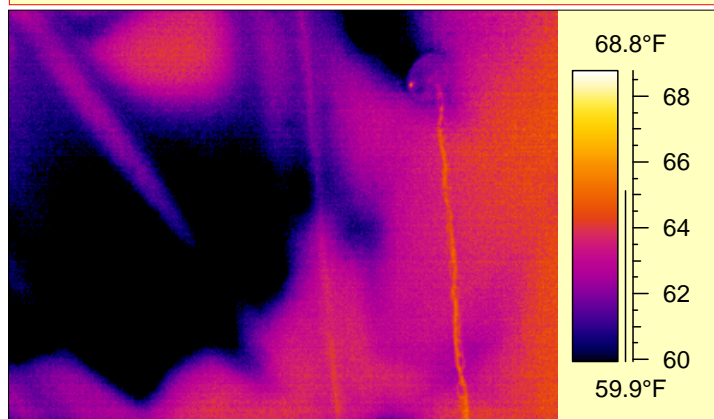
Above Exterior Door



Bedroom Ceiling & Heating

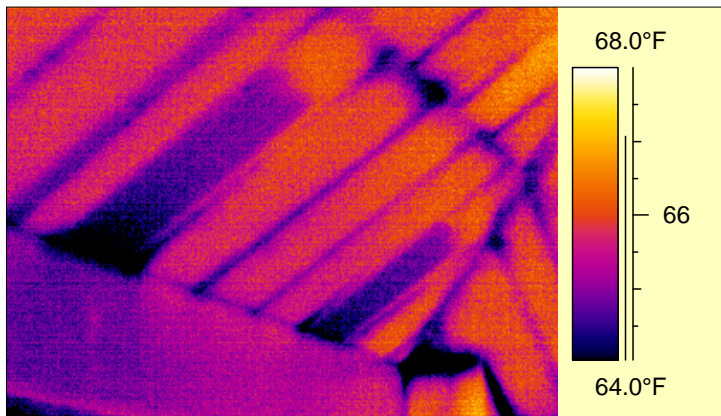


Heating Efficiency

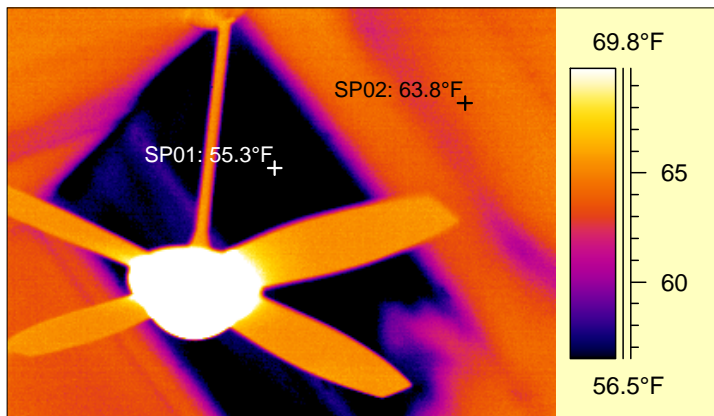


Ceiling Insulation

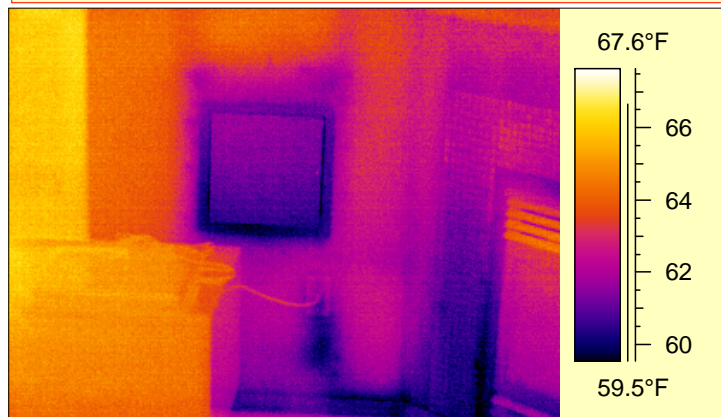
The IR image bottom right showed a bigger area in the ceiling where insulation is missing or moved. BC Building Code **5.3.1.1.(1) & 5.3.1.1.(2)**



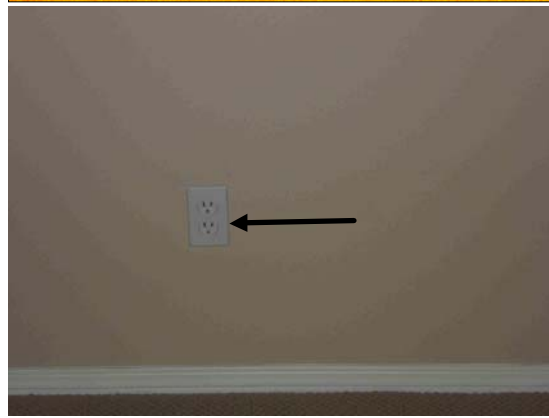
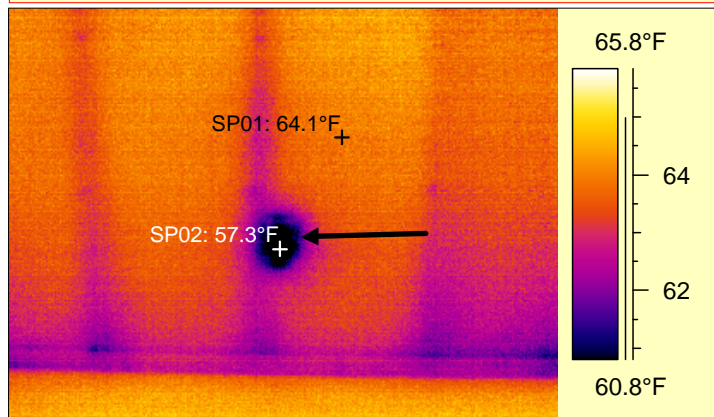
Living Room Ceiling



2nd Floor Ceiling

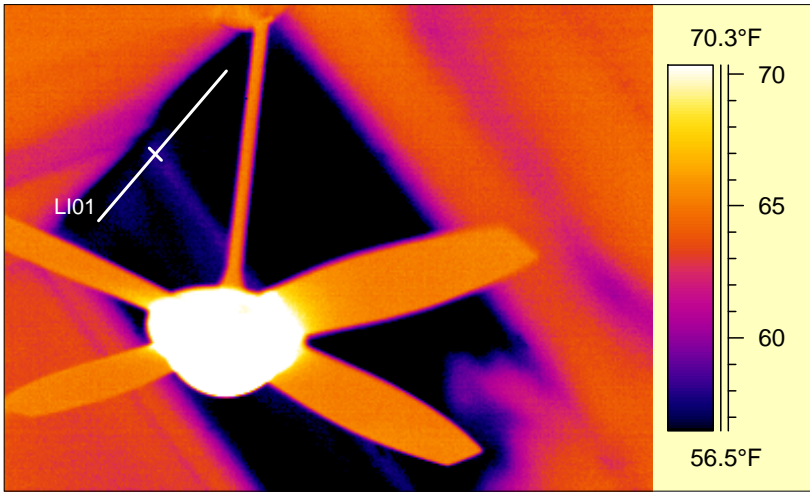


Electrical Boxes

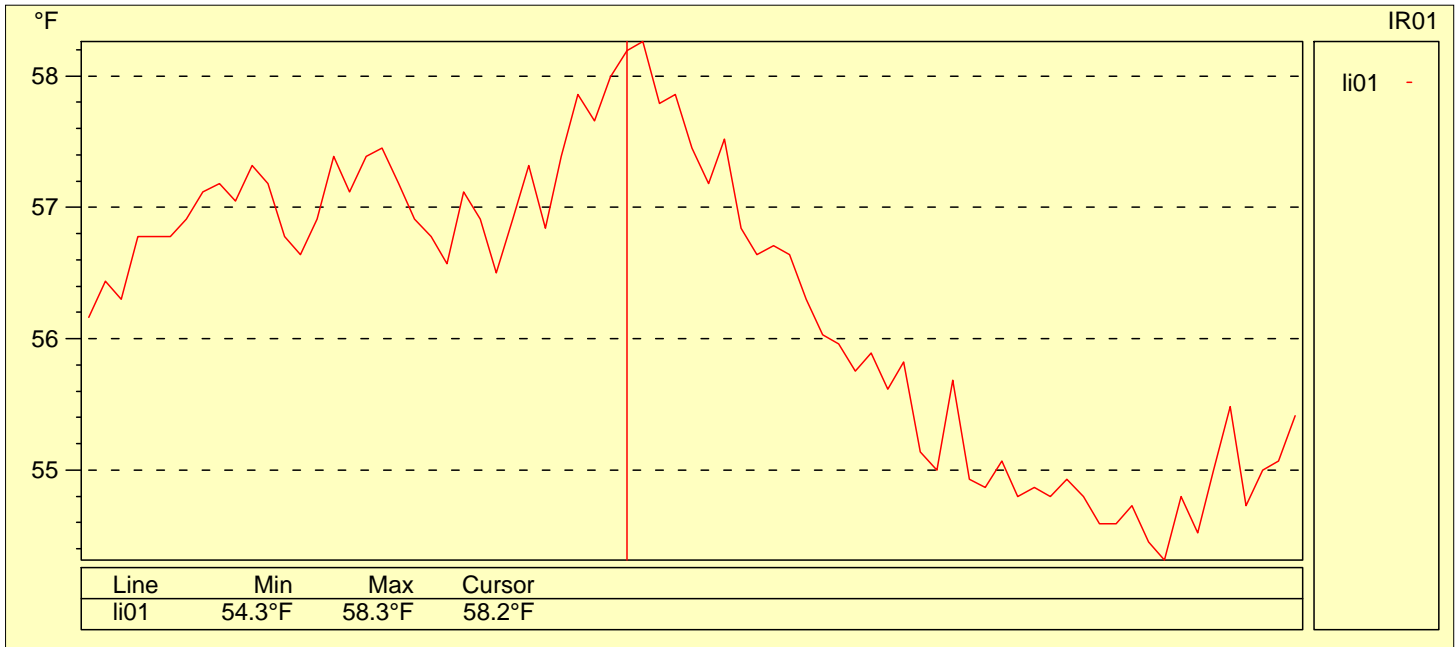


Typical in Exterior Walls

IR image top left may not be practical to address, it highlights the necessity for due diligence in the original construction. Electrical and junction box performance. BC Building Code **5.3.1.1.(1) & 5.3.1.2.(1)**
 Second floor ceiling shows where insulation is missing or moved, refer to next page.

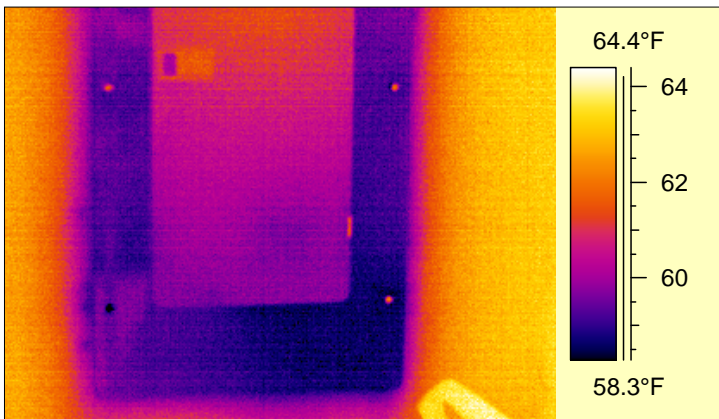


IR information	Value
Date of creation	12/22/2011
Time of creation	7:37:00 AM
Object parameter	Value
Atmospheric temperature	63.0°F
Relative humidity	0.41
Label	Value
IR : min	51.1°F

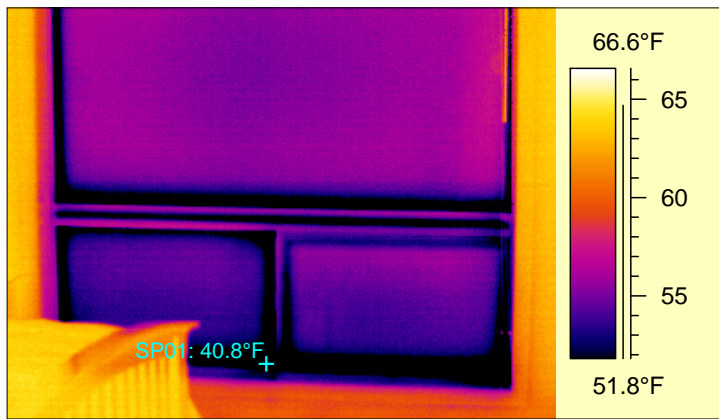


This is the same image as the previous page where insulation is missing in the ceiling. A line graph has been placed across the colder area, follow the line from Li01 and reference areas along the line in the graph above.

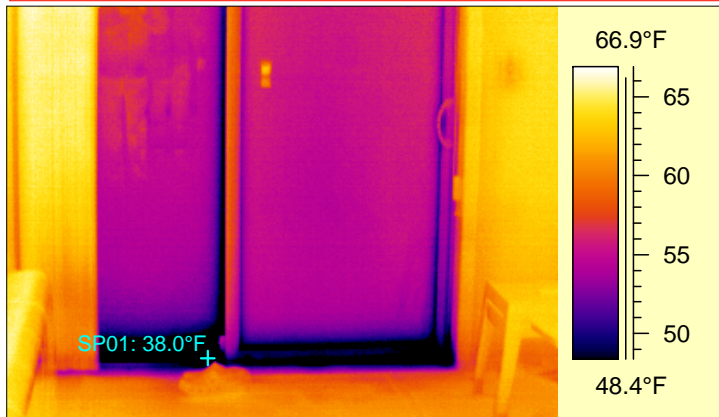
The vertical line on the graph above is where the line crosses the ceiling joist. BC Building Code **5.3.1.1.(1) & 5.3.1.2.(1)**



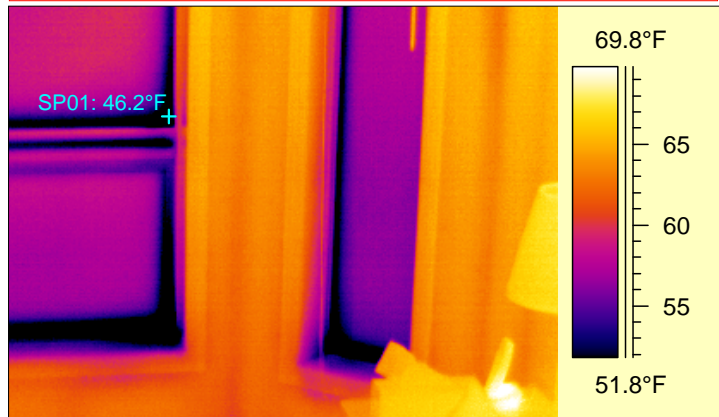
Electrical Panel, Ext. Wall



Bedroom Window, Blind Open

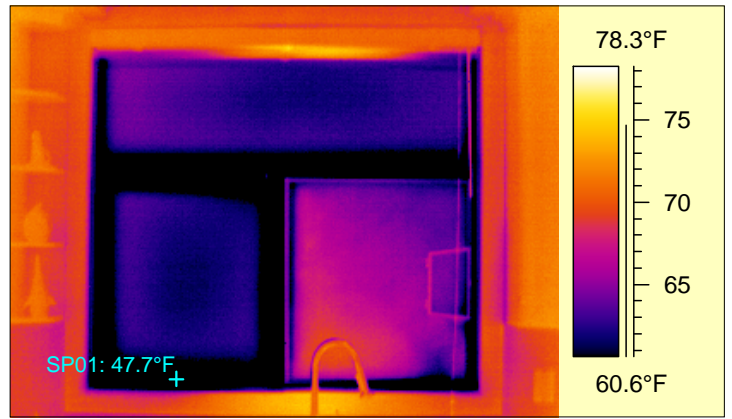
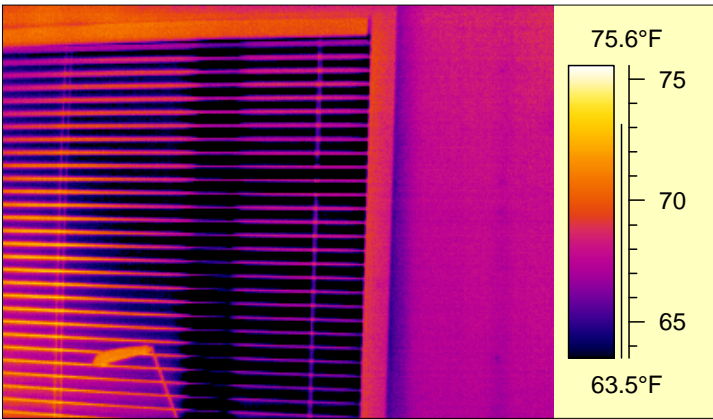


Patio Door



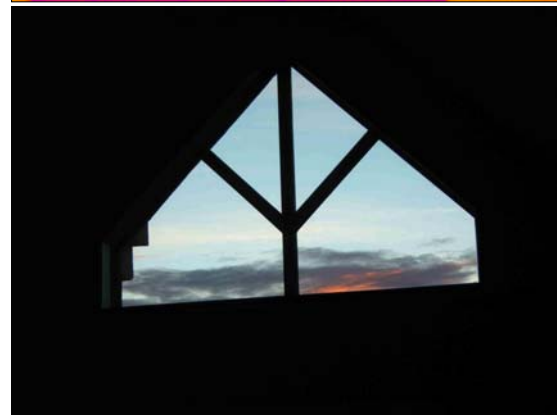
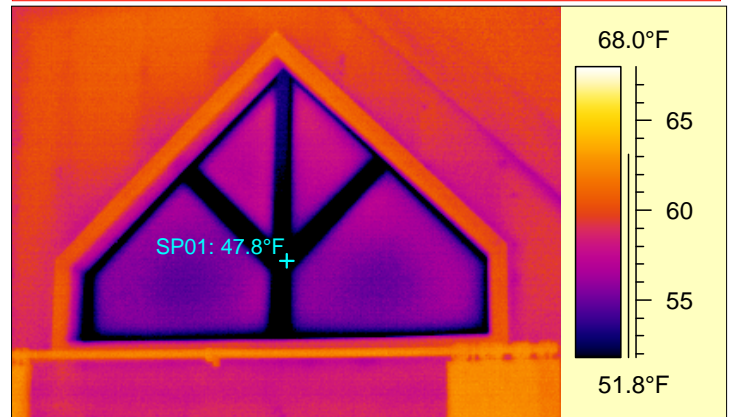
Typical Window Performance

This page show a recessed electrical panel where heat transfer or air leakage is considered. BC Building Code **5.3.1.1.(1) & 5.3.1.2.(1)** Air Leakage may apply BC Building Code **5.4.1.1.(1)** Window frames are typical and not performing consistent with a thermally broken assembly. BC Building Code **5.3.1.2.(2)**



Window Frame

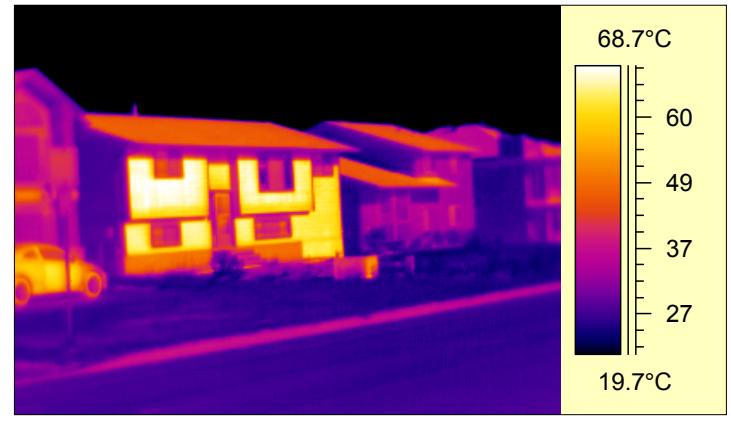
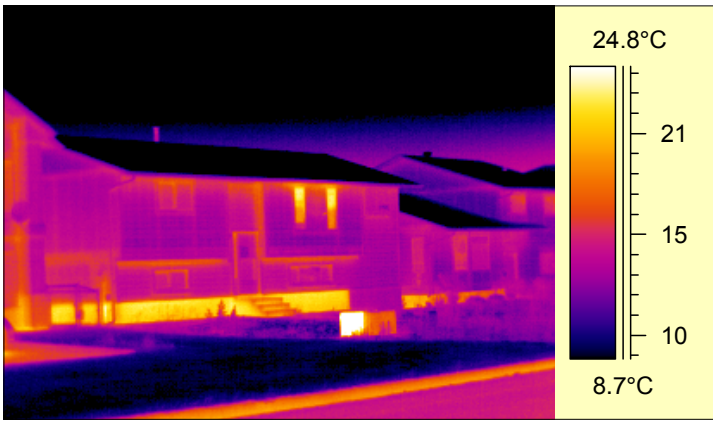
Kitchen Window



Heating in Ceiling

Tower Windows

Window frames are typical and not performing consistent with a thermally broken assembly. BC Building Code **5.3.1.2.(2)**



Before Sunrise

After Sunrise

IR information	Value
Date of creation	7/8/2012
Time of creation	5:02:10 AM
Object parameter	Value
Atmospheric temperature	16.4°C
Relative humidity	0.70

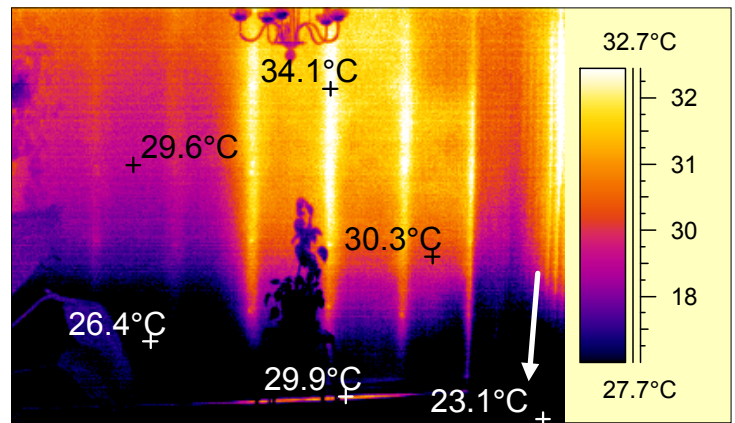
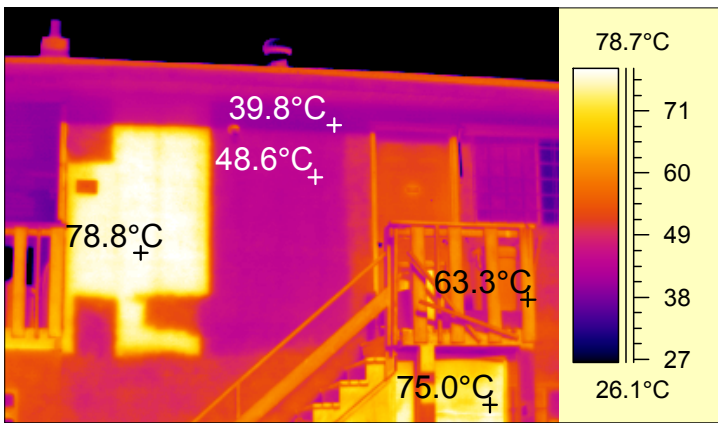
IR information	Value
Date of creation	7/8/2012
Time of creation	8:24:11 AM
Object parameter	Value
Atmospheric temperature	19.7°C
Relative humidity	0.42

Urban Heat Islands are thought to be warmer urban areas. We couldn't see that solar radiation was interacting with exterior materials and causing heat generation the building isn't designed or insulated for.

The images above show the same buildings before and after sunrise. Use the temperature scale to the right of the infrared image to see the exterior of the dark colored building is 69 deg. C at 8:24 A.M. According to building code, the building is designed and insulated for a maximum of 33 deg. C.

When heat is generated, the heat radiates atmospherically and transfers inside the building.

Use the scale to the right hand side of each infrared image to see the color/temperature reference to shaded areas and lawns.



Exterior Wall

Inside Exterior Wall

IR information	Value
Date of creation	7/11/2007
Time of creation	6:02:40 PM
Object parameter	Value
Atmospheric temperature	26.6°C
Relative humidity	0.33

IR information	Value
Date of creation	7/11/2007
Time of creation	7:52:02 PM
Object parameter	Value
Atmospheric temperature	27.8°C
Relative humidity	0.40

Energy grids are challenged and employing smart meters to monitor as well as conserve energy. They won't save the waste above, they will bill you for peak hour use reacting to symptoms.

We painted an exterior wall 2 different colors and imaged the wall on both sides to see solar impact in the early evening. Use the zoom features to magnify areas of interest. Use the scale to the right of the infrared image for color/temperature reference and the Result Tables below each image for additional infrared information.

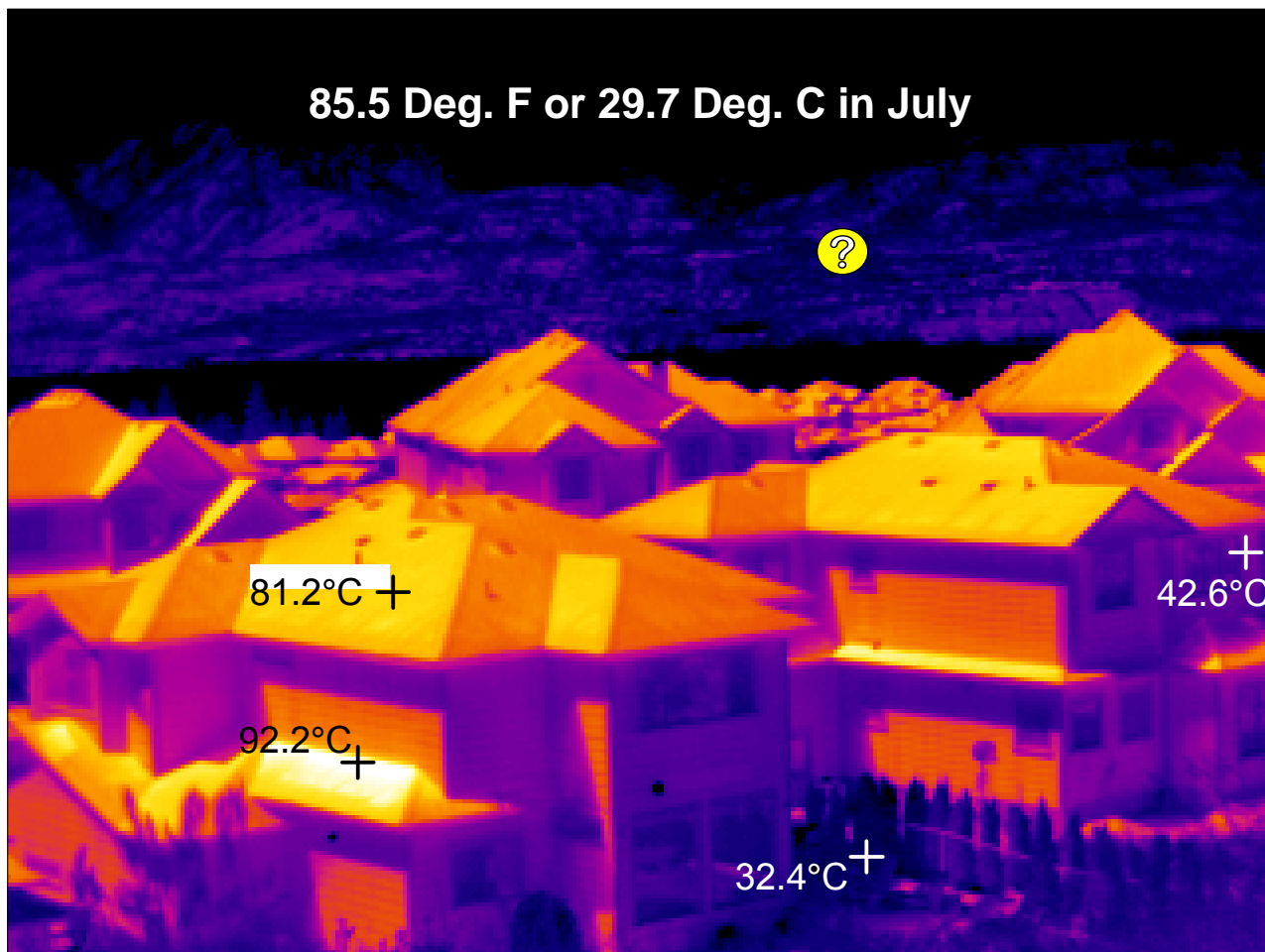
The exterior wall is designed and insulated for a maximum of 33 deg. C. At 6:02 PM the darker area is 46 deg. C above maximum design temperature.

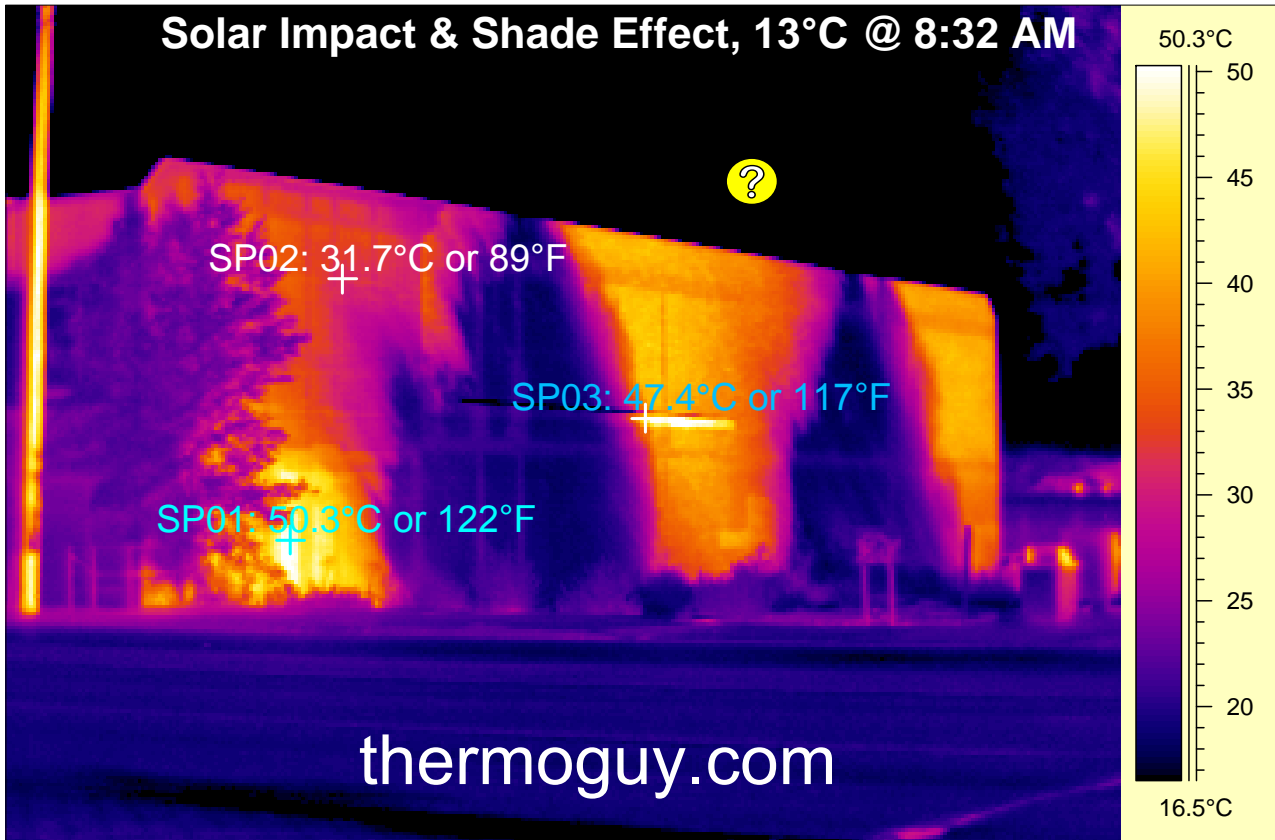
The image top right shows the affect inside the building. The heat from the solar exposed exterior tranfers inside the building through the wood frame and insulated wall.

Observe the difference in heat transfer between sides with the dark and lighter exterior colors at 7:52 PM. Lumber is a poor conductor and holds the heat till early in the morning.

The white arrow is highlighting the vent where the air conditioning enters the room. Air conditioning(A/C) is in fact refrigeration and the cold heavy air is laying on the floor creating a mold environment. The A/C unit is using 3450 watts per hour reacting to symptoms. That is 34- 100 watt light bulbs on full time and all of it reacting to symptoms. Producing more emissions wasting fossil fuels and creating an unhealthy home.

Dew point between the two indoor weather systems meeting creates mold.





Shade Stops Energy Waste With No Emissions